

Successful Adaptations for Learning to Use Touch Effectively

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Occupational Therapy For Young Children With Visual Impairments and Additional Disabilities

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Background

I am an occupational therapist who has been privileged to work with young children with multiple challenges for many years. I am especially interested in infants and preschoolers who have visual impairments as well as other disabilities. I was also a consultant for children with hearing loss in the home, at preschool, and in public school settings for three years.

Currently, I work with a little boy who has both visual and auditory impairments and a diagnosis of Charge Syndrome. He has limited vision in only one eye and a profound hearing loss, with a possibility of some hearing in one ear. I have seen him during weekly home visits since he was 6 months old and when he attends a center-based infant program twice a week. Figuring out the best ways to help him and other children with multiple sensory and/or physical impairments to understand their environments and learn how to communicate this understanding to others is absolutely fascinating!

At the Blind Childrens Center in Los Angeles, I work with a team of professionals including teachers, speech therapists, and orientation and mobility instructors to provide the best possible interventions for children who are enrolled in the center. Of course, the most important team members are the children's parents and family.

Role of Occupational Therapists

Occupational therapy is a profession and a discipline that studies the development and activities of human beings from birth to old age. Pediatric occupational therapists (O.T.s) analyze and focus on behaviors that support a child's play, self-care, and other "occupations" of childhood. **Occupation** does not mean a **Job** but how people in different stages of life spend their time in meaningful and functional activities.

O.T.s evaluate a young child's overall development and plan activities that support learning and help the child interact successfully with his or her immediate environment. For example, if a child is not able to sit independently but is beginning to reach for toys, an O.T. would suggest a way for the child to sit safely and supported so that he or she can manipulate and explore toys without having to work on trunk control or balance at the same time. The child can be helped to grasp, explore, or manipulate toys that are easy to grasp. Some youngsters are able to move their legs more effectively and can operate toys with their feet! If a child has some use of his or her hands or has head control, adaptations of simple "low-

tech" devices or more sophisticated augmentative alternative communication devices (e.g., switches with voice enhancement) can be made. This way the child can activate the switch by hand or with a head stick to request a toy or attention.

The process of assessment in occupational therapy includes observing the child with his or her parents or caregivers, presenting a variety of play materials to see how he or she interacts with them, placing the child in different body positions to get information about mobility and muscle tone, and obtaining information from the family. Evaluations focus on children's responses to a variety of sensory stimuli, such as different sounds, textures, or movements.

Depending on a child's age and ability, different kinds of toys are introduced and the child's responses are observed. The child is also usually placed in a variety of positions and encouraged or assisted, if necessary, in transitioning to a different position (e.g., sitting to standing). Many children do not like being handled by unfamiliar people; in that case a caregiver can be asked to position and interact with the child while the O.T. observes.

An occupational therapy assessment determines what a child is able to do, both independently and with assistance, what kinds of activities he or she enjoys, avoids, and finds comforting when upset. Sometimes standardized assessments may be used as a starting point but typically they are not very useful for children with multiple disabilities or sensory impairments.

When a child has a severe visual impairment in addition to other disabilities, the evaluation process is more complicated because it is necessary to determine how much the child's vision problems contribute to overall functioning. Some materials commonly used for assessment are not appropriate for children with visual impairments, as they rely primarily on visual responses, e.g., tracking or reaching for objects. Assessment can be compared to trying to solve a puzzle: what factors inhibit the child's effective interaction with the environment and what can be done to meet the child's individual learning needs?

After a comprehensive assessment and in conjunction with the child's family and other professionals working with the child, the O.T works as a member of the team to develop interventions that address the individual child's learning needs. The choice of therapeutic tools in occupational therapy needs to be highly individualized for each child. Addressing the family's concerns and priorities and what they would like to achieve through interactions with various professionals is of critical importance.

Definitions

Like all disciplines, occupational therapy has its own language, e.g., the terms "sensory integration," "sensory processing" and "sensory diet." The following are definitions for terms commonly used by occupational therapists:

Sensory integration is a therapeutic approach frequently used by O.T.s. It refers to the awareness of and organization of sensory input followed by actions that reflect this awareness. (Ayres, 1979). Sensory input is gained from our bodies and our environment through many different senses (e.g., vision, hearing, touch, smell, and taste).

Sensory processing refers to the ways in which a child indicates awareness of and responds to information received through a variety of sensory channels, including tactile, visual, auditory, proprioceptive, and vestibular. Assessing sensory processing is different and more complex than observing how a child receives or responds to visual or auditory stimuli because of a visual impairment or hearing loss.

Tactile processing refers to the awareness of touch through receptors in the skin. Some children show significant aversions to touching different textures and are labeled as "tactilely defensive" or "tactilely over-responsive or hyper-reactive." Current early intervention literature (Williamson & Anzalone, 2001) suggests that the terms "over-responsive or hyper-reactive" may be preferable to "defensive." These children demonstrate their over-responsiveness by avoiding, moving away from, crying, or even gagging, to touching items that others enjoy, e.g., stuffed animals, play dough, Jello or even different clothing fabrics.

Proprioception refers to the perception of sensation of the muscles and joints enabling the brain to know where each part of the body is and how it is moving. Children with significant proprioceptive needs and decreased awareness of their bodies' movements often seek out activities that provide them with increased awareness, such as grasping objects very tightly, jumping vigorously for long periods, or "crashing" into pillows or furniture. They seem to need extra impact in order to process information about their body positions in space.

Vestibular processing refers to a child's ability to respond to body movements through space, including swinging. It indicates whether a child is receiving adequate information to develop balance and equilibrium responses and whether the child is comfortable when his or her balance is challenged. A child may be placed on a platform swing and then gently moved from side to side at first to observe reactions. Then, if the child is able to tolerate it, more vigorous swinging is attempted.

Effective **sensory processing** involves integrating all this input to produce what is called an "adaptive response" to the world. An **adaptive response** is an appropriate action or reaction to what is being perceived, such as quickly removing one's hand from a hot stove. In order for children to learn optimally, effective sensory processing is critical.

Some children are tactilely over-responsive, keep their hands fisted to avoid touching anything but hard plastic toys and are difficult to engage in tactile exploration activities. Others may not seem to be aware of being touched (i.e., under-responsive).

Intervention Strategies

The child's preferences should **always** be respected. However, helping the child to become more comfortable with a variety of sensory experiences is very important for learning. Most children seem to respond better to firm touch, rather than light, because it gives their bodies information about where they are being touched and what is expected of them in terms of movement.

When a preferred activity has been found, items that are less acceptable can be introduced, e.g., if a child enjoys swinging, a variety of textured materials (less preferred objects) can be introduced during vestibular stimulation. Balls with different textures can be used interactively while in a swing. If the child likes water play, this experience can be expanded with toys, soap bubbles, sponges, and even cornstarch or flour added to the water. Crawling on different surfaces in pursuit of desired toys provides tactile input to the body, as does playing "peek-a-boo" with textured cloths.

If a child has significant sensory processing problems, the family can be helped to create a "sensory diet" for their child at home. A **sensory diet** is a therapist-designed plan that incorporates meaningful activities with sensory stimuli to encourage appropriate adaptive responses to daily activities (Wilbarger, 1991). If a child exhibits decreased discrimination of vestibular and/or proprioceptive information, for example, the opportunity to engage in these activities can be built into the daily schedule. Swinging on the playground, playing in a bath, and rough housing with caregivers are natural activities for young children that families can

build into their routine. In contrast, children who become overwhelmed by activities in the environment should have areas where they can withdraw until they are more comfortable, e.g., beanbag chairs, play tents, a favorite blanket in a quiet area, or even a favorite video can be used to help children who need time to themselves.

Occupational therapy support needs to be meaningful for the child through communication. Simply presenting sensory experiences without relevance to the child's interest and learning needs is not beneficial. The following are considerations for selecting object cues; touch cues, signing on the body, and coactive signs:

- A child who is hyper-responsive to textures should not be given a soft toy (if this is a texture he dislikes) as an object to touch to indicate an activity.
- If a child is overwhelmed by touch, an initial touch cue should be brief, firm and consistent, not fleeting or paired with any other tactile input.
- A child who is interested in activating toys with lights or sounds could be given a toy with one or both of these dimensions as a reward for initiating any form of communication.
- Preferred activities (e.g., swinging in a blanket) can be used to teach a child to sign MORE by stopping the movement and guiding his or her hands to imitate the sign.

For preschoolers and older children, occupational therapy objectives can be infused easily in the school program through a variety of typical routines, such as music and movement activities, obstacle courses, playground or recess activities, physical education, and guided "rough" play. O.T.s can provide suggestions on ways to position a child to provide comfort and support and enhance the child's active participation in classroom activities. Sharing experiences, ideas, and perceptions among all those involved with children with visual impairments and other disabilities is **essential** in providing meaningful interventions.

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Website

For information on sensory integration visit Sensory Integration Resource Center www.sinetwork.org

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